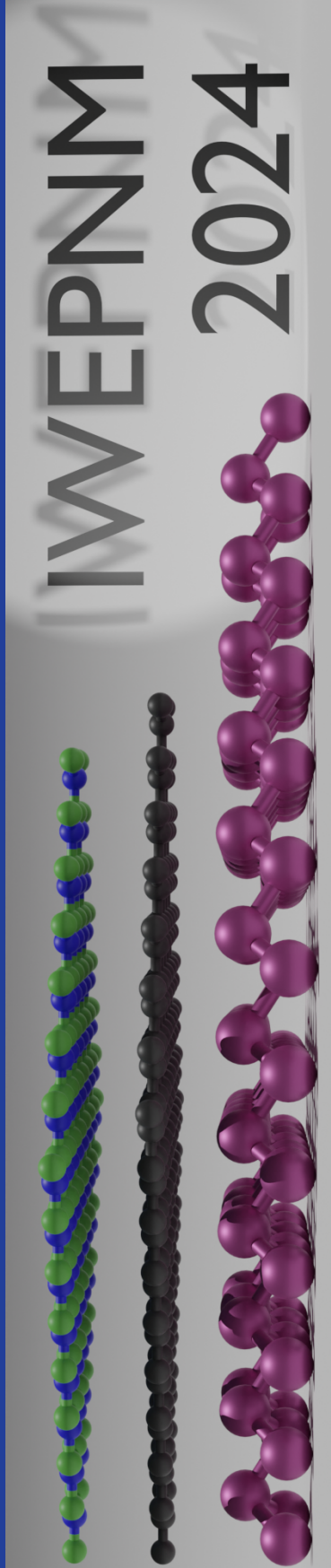
XXXVIth International Winterschool on Electronic Properties of Novel Materials

Molecular Nanostructures

Program



Hotel Sonnalp
Kirchberg/Tirol
Austria

09 - 15 March, 2024

IWEPNM 2024
CHAIRPERSONS FOR THE ORAL SESSIONS

The following participants are asked to support the program of the Winterschool by serving as chairperson:

Sunday, 10.03.	morning	Stephanie Reich
	morning, after coffee break	Hans Kurzmany
	evening	Andreas Hüttel
Monday, 11.03.	morning	Lutz Waldecker
	morning, after coffee break	Otakar Frank
	evening	Christoph Stampfer
Tuesday, 12.03.	morning	Janina Maultzsch
	morning, after coffee break	Tobias Hertel
	evening	Viera Skakalova
Wednesday, 13.03.	morning	Annick Loiseau
	morning, after coffee break	Claudia Backes
	evening	Ursula Wurstbauer
Thursday, 14.03.	morning	Ralph Krupke
	morning, after coffee break	Carlo Casari
	evening	Florian Libisch

Chairpersons are asked to start the sessions in time and **to terminate the lectures according to schedule**. The discussions may be extended up to 5 minutes beyond the schedule.

Chairpersons please remember:
You have to ask for questions from the sideroom (bar)!

For questions from the main room please ask the speaker to repeat the question. The chairperson's microphone should only be passed on to questions from the first row.

If there are any objections to the suggested list of chairpersons, please let us know at the beginning of the Winterschool.

We acknowledge your support. The Organizers

DAILY PROGRAM

AND

ABSTRACTS

08:30 – 09:30	TUTORIAL: J. Zaumseil, Heidelberg *Creating and Quantifying Different Luminescent Defects in Single-Walled Carbon Nanotubes*
09:30 – 10:00	C. Voisin, Paris *Organic Color Centers Grafted on Carbon Nanotubes Coupled to a High finesse Micro-Cavity*
10:00 – 10:30	Coffee Break
10:30 – 11:00	H. Liu, Beijing *Milligram-Scale Production and Property Detection of Multiple Single-Chirality Carbon Nanotubes*
11:00 – 11:30	S. Maruyama, Tokyo *One-Dimensional vdW 'Double' Heterostructures Based on Single-Walled Carbon Nanotubes*
11:30 – 12:00	Y. Miyata, Tokyo *Growth and Characterization of 1D Transition Metal Chalcogenides*
12:00 – 17:00	Mini Workshops
17:00 – 18:30	Dinner
18:30 – 19:00	K. Franke, Berlin *Diode Effect in Josephson Junctions with a Single Magnetic Atom*
19:00 – 19:30	L. Venkataraman, New York *Ultrahigh Conductance in One-Dimensional Topological Insulators*
19:30 – 20:00	A. Stern, Rehovot *Electrons and Composite Fermions at the Half Filled Chern Band*
20:00	Poster I

08:30 – 09:30	TUTORIAL: Hone, New York *2D Materials for Quantum Computing*
09:30 – 10:00	R. Gorbachev, Manchester *Ultraclean Layer Transfer and Atomic Reconstruction in Twisted TMD Lattices*
10:00 – 10:30	Coffee Break
10:30 – 11:00	R. Bratschitsch, Münster *Efficient Light Collection From Single-Photon Emitters in 2D Materials*
11:00 – 11:30	K. Bolotin, Berlin *Nanomechanical Valley Fingerprinting, Hybridization, and Pseudospin Control of Excitons in 2D Materials*
11:30 – 12:00	P. Steeneken, Delft *Magnetic and Thermal Properties of 2D Materials Probed by Nanomechanical Resonance*
12:00 – 17:00	Mini Workshops
17:00 – 18:30	Dinner
18:30 – 19:00	A. Yazdani, Princeton *Visualizing Strongly Correlated Electronic States in 2D Materials*
19:00 – 19:30	S. Forti, Pisa *Probing the Band Structure of Two-Dimensional Materials by Means of Photoemission Spectroscopy*
19:30 – 20:00	M. Morgenstern, Aachen *Photoelectron Spectroscopy of Exfoliated Antiferromagnets*
20:00	Poster II

Tuesday, March 12th

08:30 – 09:00	U. Wurstbauer, Rome *Moiré Minibands, Twist Disorder and Exciton-Phonon Coupling in van der Waals Stacks*
09:00 – 09:30	L. Baldassarre, Rome *Resonance Raman Spectroscopy with Infrared Excitation Energy on Graphene and TMDs*
09:30 – 10:00	E. Malic, Marburg *Ultrafast Charge Transfer Dynamics in van der Waals*
10:00 – 10:30	Coffee Break
10:30 – 11:00	A. Loiseau, Chatillon *Excitonic Properties in Hexagonal Boron Nitride and BN/BN Homostructures*
11:00 – 11:30	Y. Kato, Japan *Exciton Physics and Cavity Quantum Electrodynamics in Air-Suspended Carbon Nanotubes*
11:30 – 12:00	O. Yaffe, Rehovot *Raman Scattering from Disordered Single Crystal*
12:00 – 17:00	Mini Workshops
17:00 – 18:30	Dinner
18:30 – 19:00	Carlo S. Casari, Milano *Electronic and Vibrational Properties of 2D Carbon Materials Beyond Graphene*
19:00 – 19:30	L. Classen, MPI-FKF/TUM *Field Control of Many-Body Phases in Frustrated Moiré Bilayers*
19:30 – 20:00	G. Schleder, Campinas *Machine Learning for 2D Materials Discovery and Design: Topological Insulators and Multi-System Moiré Assemblies*

08:30 – 09:30	TOTORIAL: M. Hersam, Evanston *Boron in the 2D Limit: Borophene, Borophane, and Beyond*
09:30 – 10:00	B. Liu, Shenzhen *Mass-production of two-dimensional h-BN and its liquid crystals for deep UV light modulation*
10:00 – 10:30	Coffee Break
10:30 – 11:00	A. MORPURGO, Geneva *A new generation of ionic liquid gated devices*
11:00 – 11:30	T. Knobloch, Vienna *Gate Insulators for 2D Semiconductor-Based Field Effect Transistors*
11:30 – 12:00	G. Duesberg, Neubiberg *Versatile 2D material surface functionalization with organic adlayers*
12:00 – 17:00	Mini Workshops
17:00 – 18:30	Dinner
18:30 – 19:00	A. Bachtold, Barcelona *The sound of tiny guitars approaching the quantum regime*
19:00 – 19:30	I. Epstein, Tel Aviv *Novel Polaritonic Phenomena in 2D Materials*
19:30 – 20:00	R. Hillenbrand, San Sebastian *THz nanoscopy of ultraconfined in-plane anisotropic plasmon polaritons*
20:00	Poster III

08:30 – 09:00	U. Kaiser, Ulm *From functionalizing inorganic two-dimensional materials on the level of single atoms towards molecular imaging of organic two-dimensional materials*
09:00 – 09:30	D. Akinwande, Austin *Atomristors: Single-Atom Memristors*
09:30 – 10:00	X. Chen, Berlin *Engineering the Chemistry of 2D Transition Metal Dichalcogenides*
10:00 – 10:30	Coffee Break
10:30 – 11:00	F. Fischer, Berkeley *The Road from Semiconductors to Metals: Engineering Topological States in Nanographenes*
11:00 – 11:30	R. Gillen, Swansea *Family Behavior and Dirac Bands in Armchair Nanoribbons with 4-8 Defect Lines*
11:30 – 12:00	I. Stará, Prague 6 *Helicenes as Fascinating Screwed Molecules with Unique Electronic Properties*
12:00 – 17:00	Mini Workshops
17:00 – 17:30	A. Kurzmann, Cologne *Electrostatically defined graphene quantum dots*
17:30 – 18:00	C. Backes, Kassel *Measuring and controlling the dimensions of liquid-exfoliated nanosheets*
18:00 – 18:30	A. Jorio, Belo Horizonte *Summary*
19:00 – 20:30	Farewell Dinner (Bauernbuffet)